

1. (currently amended) A circuit for regulating ~~the~~ a substrate potential of an integrated circuit comprising:

a switch:

a first input for controlling ~~said~~ the switch coupled to a first N-well bias supply line;

a second input for controlling ~~said~~ the switch coupled to a substrate bias supply line;

a first switching terminal of ~~said~~ the switch coupled to a ground; and

an output terminal of ~~said~~ the switch coupled to a P-type substrate,

wherein ~~said~~ the switch is operable to selectively couple ~~said~~ the second input to ~~said~~ the output terminal responsive to a voltage of ~~said~~ the substrate bias supply line.

2. (currently amended) The circuit of Claim 1, wherein ~~said~~ the switch is operable to electrically couple ~~said~~ the P-type substrate to ~~said~~ the ground when a bias voltage is present on ~~said~~ the first N-well bias supply line.

3. (currently amended) The circuit of Claim 1, wherein ~~said~~ the switch is operable to electrically couple ~~said~~ the P-type substrate to ~~said~~ the substrate bias supply line when a substrate bias voltage is present on ~~said~~ the substrate bias supply line.

4. (currently amended) The circuit of Claim 1, further comprising a third input for controlling ~~said~~the switch coupled to a second N-well bias supply line.

5. (currently amended) The circuit of Claim 4, wherein ~~said~~the switch is operable to electrically couple ~~said~~the P-type substrate to ~~said~~the ground when a bias voltage is present on ~~said~~the second N-well bias supply line.

6. (currently amended) The circuit of Claim 4, wherein ~~said~~the switch is operable to electrically couple ~~said~~the P-type substrate to ~~said~~the substrate bias supply line when a substrate bias voltage is present on ~~said~~the substrate bias supply line.

7. (currently amended) The circuit of Claim 1, wherein ~~said~~the switch is operable to electrically couple ~~said~~the P-type substrate to ~~said~~the substrate bias supply line when a substrate bias voltage is present on ~~said~~the substrate bias supply line and there is no bias voltage present on ~~said~~the N-well bias line.

8. (currently amended) The circuit of Claim 1, wherein ~~said~~the switch is operable to electrically couple ~~said~~the P-type substrate to ~~said~~the ground when a substrate bias voltage is present on ~~said~~the substrate bias supply line and there is no bias voltage present on ~~said~~the N-well bias line.

Claims 9-20 (canceled) (various restrictions)

21. (currently amended) A circuit for regulating ~~the~~a substrate potential of an integrated circuit comprising:

switch means:

a first input for controlling ~~said~~the switch means coupled to a first N-well bias supply line;

a second input for controlling ~~said~~the switch means coupled to a substrate bias supply line;

a first switching terminal means of ~~said~~the switch means coupled to a ground; and

an output terminal means of ~~said~~the switch means coupled to a P-type substrate, wherein ~~said~~the switch means is operable to selectively couple ~~said~~the second input to ~~said~~the output terminal means responsive to a voltage of ~~said~~the substrate bias supply line.

22. (currently amended) The circuit of Claim 21, wherein ~~said~~the switch means is operable to electrically couple ~~said~~the P-type substrate to ~~said~~the ground when a bias voltage is present on ~~said~~the first N-well bias supply line.

23. (currently amended) The circuit of Claim 21, wherein ~~said~~the switch means is operable to electrically couple ~~said~~the P-type substrate to ~~said~~the substrate bias supply line when a substrate bias voltage is present on ~~said~~the substrate bias supply line.

24. (currently amended) The circuit of Claim 21, further comprising a third input for controlling ~~said~~the switch means coupled to a second N-well bias supply line.

25. (currently amended) The circuit of Claim 24, wherein ~~said~~the switch means is operable to electrically couple ~~said~~the P-type substrate to ~~said~~the ground when a bias voltage is present on ~~said~~the second N-well bias supply line.

26. (currently amended) The circuit of Claim 24, wherein ~~said~~the switch means is operable to electrically couple ~~said~~the P-type substrate to ~~said~~the substrate bias supply line when a substrate bias voltage is present on ~~said~~the substrate bias supply line.

27. (currently amended) The circuit of Claim 21, wherein ~~said~~the switch means is operable to electrically couple ~~said~~the P-type substrate to ~~said~~the substrate bias supply line when a substrate bias voltage is present on ~~said~~the

substrate bias supply line and there is no bias voltage present on ~~said~~the N-well bias line.

28. (currently amended) The circuit of Claim 21, wherein ~~said~~the switch means is operable to electrically couple ~~said~~the P-type substrate to ~~said~~the ground when a substrate bias voltage is present on ~~said~~the substrate bias supply line and there is no bias voltage present on ~~said~~the N-well bias line.

29. (new) An integrated circuit for regulating a substrate potential of an integrated circuit comprising:

a substrate;

an integrated circuit switch formed on the substrate, the switch including:

a first input configured for controlling the switch coupled to a first N-well bias supply line, the first N-well bias supply line configured for supplying a biasing voltage to an n-well;

a second input configured for controlling the switch coupled to a substrate bias supply line, the substrate bias supply line configured for supplying a substrate biasing voltage to the substrate;

a first switching terminal of the switch coupled to a ground; and

an output terminal of the switch coupled to the substrate, wherein the switch is operable to selectively couple the second input to the output terminal responsive to a voltage of the substrate bias supply line.

30. (new) The circuit of Claim 29, wherein the switch is operable to electrically couple the substrate to the ground when the biasing voltage is present on the first N-well bias supply line.

31. (new) The circuit of Claim 29, wherein the switch is operable to electrically couple the substrate to the substrate bias supply line when a substrate biasing voltage is present on the substrate bias supply line.

32. (new) The circuit of Claim 29, further comprising a third input configured for controlling the switch coupled to a second N-well bias supply line.

33. (new) The circuit of Claim 32, wherein the switch is operable to electrically couple the substrate to the ground when a biasing voltage is present on the second N-well bias supply line.

34. (new) The circuit of Claim 29, wherein the switch is operable to electrically couple the substrate to the substrate bias supply line when the substrate biasing voltage is present on the substrate bias supply line.

35. (new) The circuit of Claim 29, wherein the switch is operable to electrically couple the substrate to the substrate bias supply line when the substrate biasing voltage is present on the substrate bias supply line and there is no biasing voltage present on the first N-well bias supply line.

36. (new) The circuit of Claim 29, wherein the switch is operable to electrically couple the substrate to the ground when the substrate biasing voltage is present on the substrate bias supply line and there is no biasing voltage present on the first N-well bias supply line.

37. (new) A circuit for regulating a substrate potential of an integrated circuit comprising:

a switch, the switch including:

a first input for controlling the switch coupled to a first N-well bias supply line;

a second input for controlling the switch coupled to a substrate bias supply line;

an output coupled to a substrate;

a first switching terminal of the switch coupled to a ground; and

wherein the switch is configured for coupling the output to the first switching terminal responsive to a voltage on the substrate.

38. (new) The circuit of Claim 37, wherein the switch is operable to electrically couple the substrate to the ground when a biasing voltage is present on the first N-well bias supply line.

39. (new) The circuit of Claim 37, wherein the switch is operable to electrically couple the substrate to the substrate bias supply line when a substrate biasing voltage is present on the substrate bias supply line.

40. (new) The circuit of Claim 37, further comprising a third input configured for controlling the switch coupled to a second N-well bias supply line.

41. (new) The circuit of Claim 40, wherein the switch is operable to electrically couple substrate to the ground when a biasing voltage is present on the second N-well bias supply line.

42. (new) The circuit of Claim 37, wherein the switch is operable to electrically couple the substrate to the substrate bias supply line when a substrate biasing voltage is present on the substrate bias supply line and there is no biasing voltage present on the N-well bias line.



43. (new) The circuit of Claim 37, wherein the switch is operable to electrically couple the substrate to the ground when a substrate biasing voltage is present on the substrate bias supply line and there is no biasing voltage present on the N-well bias line.

44. (new) An integrated circuit comprising:

a circuit for regulating the substrate potential of the integrated circuit including:

a substrate;

a n-well formed in the substrate;

a switch, the switch comprising:

a first input for controlling the switch coupled to the n-well and coupled to a first n-well bias supply line configured for providing a biasing voltage to the n-well;

a second input for controlling the switch coupled to the substrate and coupled to a substrate bias supply line configured for providing a substrate biasing voltage to the substrate;

an output of the switch coupled to the substrate;

a first switching terminal of the switch coupled to a ground;

and

wherein the switch is configured for coupling the output to the first switching terminal responsive to the substrate biasing voltage.

45. (new) The circuit of Claim 44, wherein the switch is operable to electrically couple the substrate to the ground when the biasing voltage is present on the first n-well bias supply line.

46. (new) The circuit of Claim 44, wherein the switch is operable to electrically couple the substrate to the substrate bias supply line when the substrate biasing voltage is present on the substrate bias supply line.

47. (new) The circuit of Claim 44, further comprising a third input configured for controlling the switch coupled to a second n-well bias supply line.

48. (new) The circuit of Claim 47, wherein the switch is operable to electrically couple the substrate to the ground when a biasing voltage is present on the second n-well bias supply line.

49. (new) The circuit of Claim 44, wherein the switch is operable to electrically couple the substrate to the substrate bias supply line when the substrate biasing voltage is present on the substrate bias supply line.

50. (new) The circuit of Claim 44, wherein the switch is operable to electrically couple the substrate to the substrate bias supply line when a

substrate biasing voltage is present on the substrate bias supply line and there is no biasing voltage present on the n-well bias line.

51. (new) The circuit of Claim 44, wherein the switch is operable to electrically couple the substrate to the ground when the substrate biasing voltage is present on the substrate bias supply line and there is no biasing voltage present on the n-well bias line.